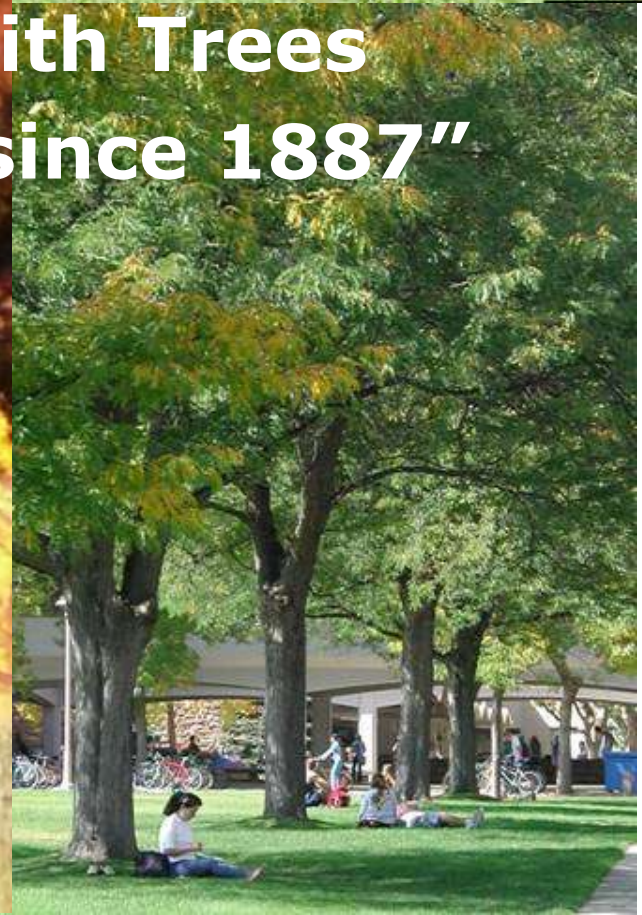




**“Connecting People with Trees  
and Wildfire Protection since 1887”**







# Legislative Authority

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## **K.S.A. 76 – 425 (a,b,c,d,e,f)**

- **16 powers and duties (76-425d)**

- **Service and Education**

- Forest Management & Tree Planting
- Community Forest Management & Tree Planting
- Marketing & Utilization of Forest Products
- Prevention and Suppression of Wildfire
- Protection of Forestland
- Provision of Tree Seedlings & Seed

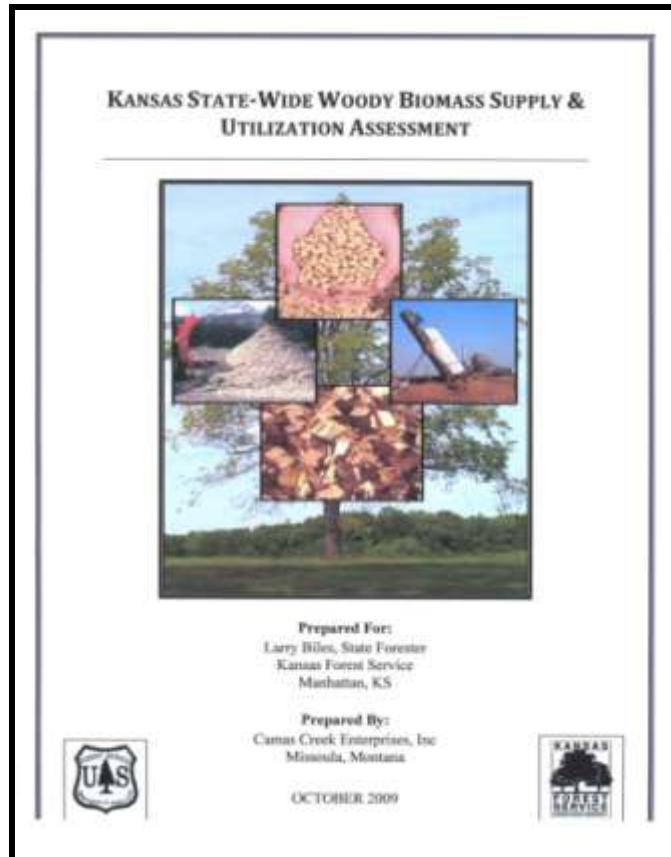
# Issues & Opportunities

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## Woody Biomass: An Alternative Fuel for Kansas



# Wood Waste Survey 2009



- Wood processing by products
  - Primary
  - Secondary
- Community tree waste
  - Municipal Arborist
  - Commercial Arborist
  - Electric utility tree waste
- Landfills and burn sites

# Available material

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- 262,000 green tons
  - 69%, 182 thousand tons currently disposed through burn sites and landfills

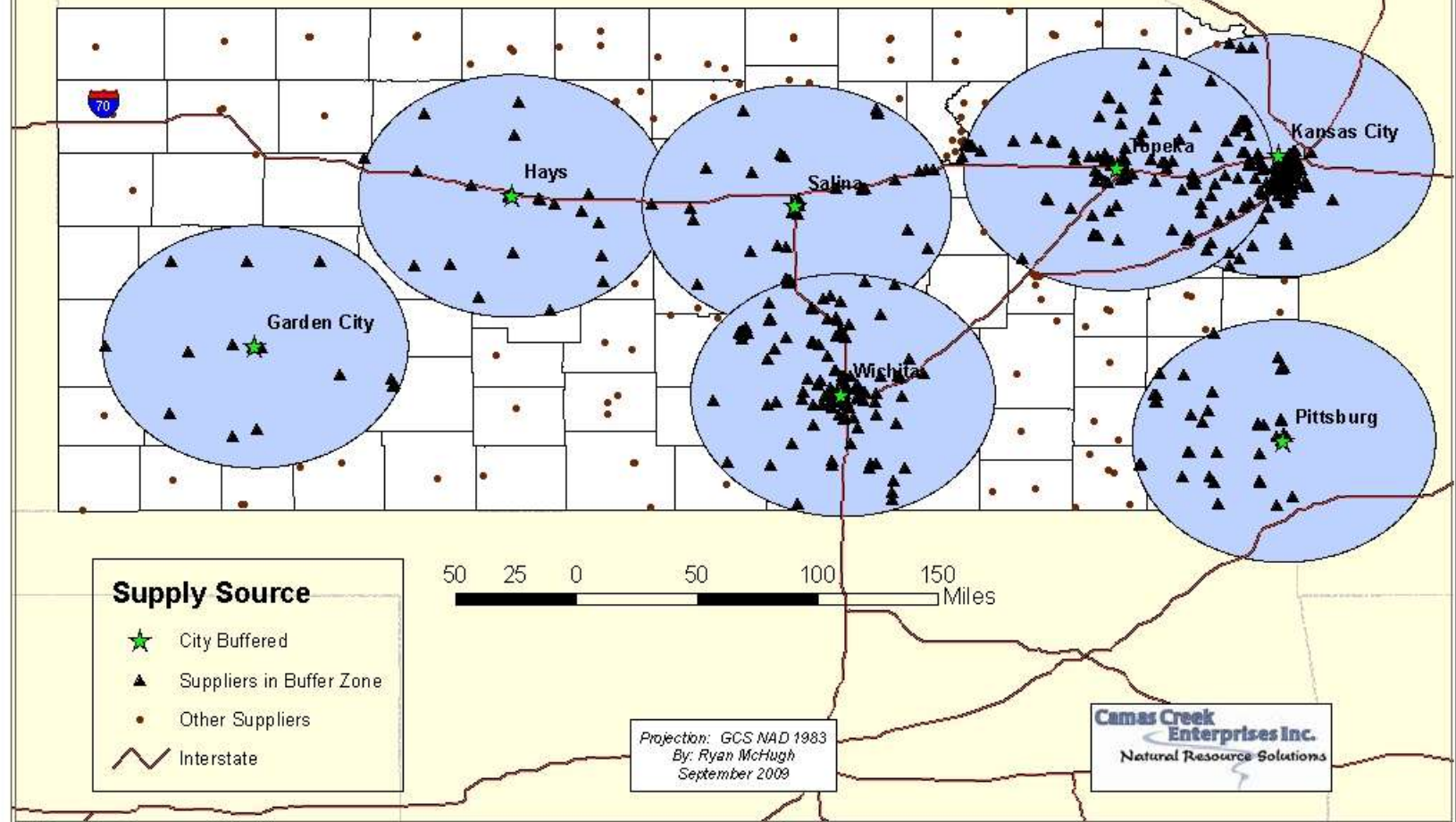
# Wood Waste Supply Locations

## All Sources





# KANSAS FOREST SERVICE WOOD WASTE SUPPLY ASSESSMENT



# Suppliers Within 50 Mile Radius

CITY	TOTAL WOOD WASTE	POTENTIALLY AVAILABLE	SUPPLIER COUNT	DISPOSAL SITES
KANSAS CITY	79,222	70,785	162	11
WICHITA	70,594	62,534	129	10
TOPEKA	39,624	29,388	137	14
PITTSBURG	29,783	16,177	39	15
SALINA	10,948	8,435	57	11
HAYS	7,223	6,086	28	10
GARDEN CITY	4,078	3,351	15	13



# Wood Waste Types

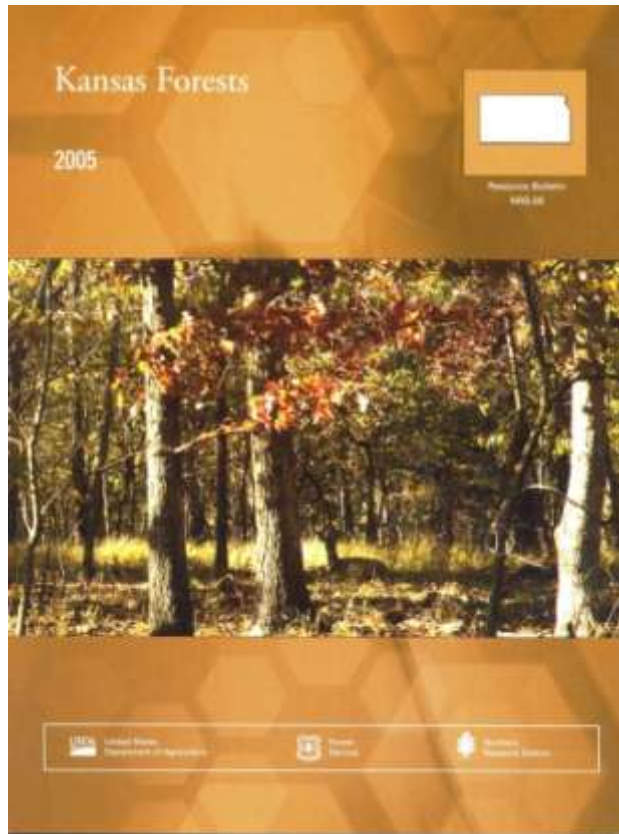
GROUP	PROCESSED	UN-PROCESSED	PERCENT PROCESSED
Primary Processors	14,574	1,200	92%
Secondary Processors	19,102	14,463	57%
Utility	33,639	0	100%
Commercial Arborists	13,236	17,712	43%
Municipal Arborists	23,254	27,836	46%
Waste Disposal Sites	20,628	25,419	45%
Other sources	50,050	998	98%
<b>TOTAL</b>	<b>174,483</b>	<b>87,629</b>	<b>67%</b>

# Kansas Boiler Survey

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- 400 boilers more than 40 years old
- 24 – 7 operations
- Oil and propane

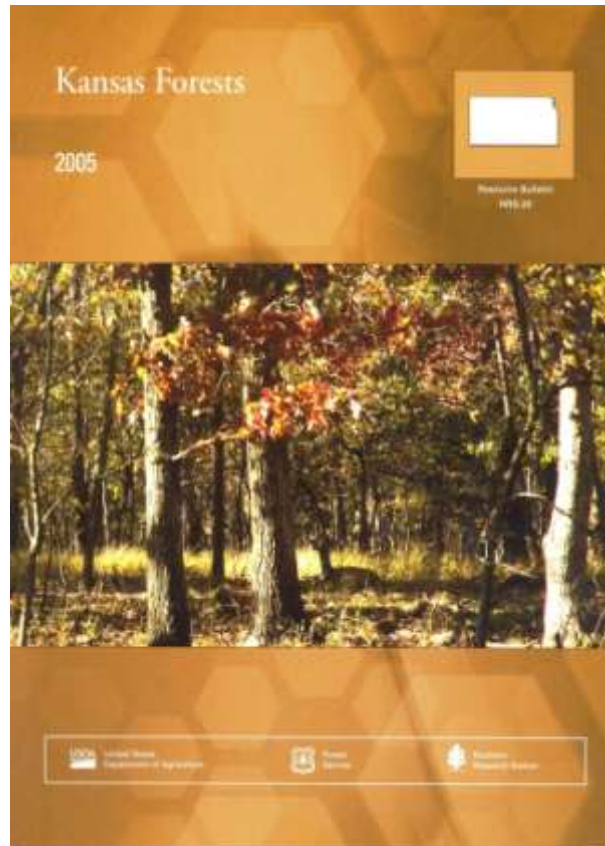
# Forest Inventory and Analysis



- 115 million green tons in native forests
- Annual growth - 2.7 million green tons
- 1.2 million green tons low quality, non-commercial



# Eastern Red Cedar



- 23,000% increase in volume 1965 – 2005
- 65 million cu. ft.
- 94,000 acres – cedar type
- 430,000 acres with cedar present

# Wood Energy Use Stories

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- Smith Sawmill in Missouri is generating electricity for their machines and heat for their kilns.
- Five schools in Missouri are transforming existing conventional heating system to wood-fired boiler system



# Hospitals Utilizing Wood for Energy

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- **Elk County Regional Health Facility, PA**
  - Installed Wood Chip Boiler in 2007
  - System is not only providing heat but also domestic hot water
  - Savings for a 6 month period in 2007-2008 were **\$94,000**
  - Savings in 2008-2009 **\$300,000**
  
- **Vermont North County Hospital, VT**
  - Is now operational
  - saving the hospital as much as **\$250,000** each year.





# Kansas' Wood Energy Systems / Energy Businesses

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- Alfalfa Dehydrators
- Wood Pellet / Briquetting plants
- Frito Lay
- Superior Boiler Works
- Earth Care Products
- Alternative Energy Systems  
International

# Fuel to School Projects

Facility	Square Footage	Annual Wood Consumption Green Tons	Estimated Annual Energy Cost Savings	Date Operational
Derby, MT Public Schools	82,000	750	\$90,000	November 2003
Ely, NV Public Schools	36,400	300	\$35,000	February 2005
Council, ID Public Schools	60,000	300	\$59,000	September 2005
Thompson Falls, MT Public Schools	60,500	400	\$60,000	October 2005
University MT, Western Campus	471,000	3800	\$118,000	February 2007
Townsend, MT Elementary and High Schools	120,000	170 (Wood Pellets)	\$19,000	March 2007
Deer Lodge, MT Elementary	38,000	730	\$35,500	October 2008
<b>TOTAL</b>		<b>6280</b>		



































**SWIMMING POOL  
RULES**

1. NO RUNNING OR JUMPING  
2. NO DIVING FROM THE POOL  
3. NO SWIMMING UNDER THE POOL  
4. NO SWIMMING IN THE POOL  
5. NO SWIMMING IN THE POOL  
6. NO SWIMMING IN THE POOL  
7. NO SWIMMING IN THE POOL  
8. NO SWIMMING IN THE POOL  
9. NO SWIMMING IN THE POOL  
10. NO SWIMMING IN THE POOL



















# Community of Interest

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- FS
- NRCS
  - RC&D
- RD
- Commerce
- SBDC
- Energy
  - FCIP / ESPC / ESCO
- KSU - Extension
- KSU CECD
- KACD
- KLA
- TLA
- Queal Ent.
- Ranchland Dev.



# Contacts

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- Winfield High School/ Middle School
- Southwestern College (Winfield)
- Morris, Riley and Bourbon County Schools, and Hayden High - Topeka
- Coffee County Hospital
- Franklin & Barber Co. Courthouses
- East Kansas Agri – Energy
  - Low Carbon Fuel Standards

# We have contacted

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- Kansas Municipal Utilities
  - Municipal systems with in-house electric power generation
- Kansas Association of School Administrators
- Kansas Health Care Engineer's Association



# Marketing Approach

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- Are you planning to install new or upgrade / replace your existing energy system?
- Are you considering alternative fuels?
- Is wood one of those fuels?
- Might the KFS – KSU be of assistance?

# How KFS can help?

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- Prefeasibility technical assistance
- Arrange tours of operating systems
- System manufacturer references
- Engineering service provider references
- Air permitting references
- Funding references
- Case studies
- Information and education

# Prefeasibility Report Includes

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- A description of the system
- An estimate of annual fuel costs
- Design of one potential option
- A site plan including access and storage
- Estimated installation costs



# Kansas Forest Service Wood Energy Program

## PRE-FEASIBILITY ASSESSMENT FORM\*

Date: \_\_\_\_\_

Mailing Address \_\_\_\_\_

Person filling out form: \_\_\_\_\_

Institution: \_\_\_\_\_

City: \_\_\_\_\_

Contact Person: \_\_\_\_\_

County: \_\_\_\_\_

Phone Number: \_\_\_\_\_

State: \_\_\_\_\_

Fax: \_\_\_\_\_

Phone number: \_\_\_\_\_

Fax: \_\_\_\_\_

### I. Facility Information

- ☐ Elementary school:
- ☐ Middle school/ Junior High:
- ☐ High school:
- ☐ Hospital:
- ☐ Prison:
- ☐ Others:  
(describe) \_\_\_\_\_

Size of facility: \_\_\_\_\_ (Sq. ft heated space)

Number of people in building: \_\_\_\_\_

Year of Construction: \_\_\_\_\_

Year(s) of major renovations: \_\_\_\_\_

Next planned renovation: \_\_\_\_\_

No. of floors: \_\_\_\_\_

No. of Buildings: \_\_\_\_\_





# **WOOD FUELED BOILER FINANCIAL FEASIBILITY USER'S MANUAL**

# Financial Resources

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- USDA Rural Development
- EPA
- Dept. of Energy
- Carbon Offset Traders
  - The Climate Trust
  - Eco Securities
  - Native Energy
- Community Connections
- K-12



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# Questions ?